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7.1 REFERENCE INFORMATION

7.1.1 GLOSSARY

Word	Definition
<i>Adsorption</i>	The adhesion of one substance to the surface of another.
<i>Aeration</i>	A process by which a water body secures oxygen directly from the atmosphere. The gas can then enter the biochemical oxidation reactions in the water.
<i>Aerobic</i>	Life forms or processes that require the presence of molecular oxygen.
<i>Alluvium</i>	The deposition of sediment by a river at any point along its course.
<i>Ambient</i>	Surrounding, external or unconfined conditions.
<i>Anaerobic</i>	Processes that occur in the absence of molecular oxygen.
<i>Anoxia</i>	The condition of oxygen deficiency.
<i>Anthropogenic</i>	Caused or produced through the agency of humans.
<i>Assimilative Capacity</i>	The rate at which an aquatic system must consume and remove impurities from water to maintain water quality.
<i>Autotrophic organisms</i>	Organisms that produce their own energy from inorganic compounds (usually photosynthesis).
<i>Biomass</i>	The weight of biological matter, often measured in terms of grams per square meter of surface area.
<i>Chlorophyll <u>a</u></i>	A photosynthetic pigment reflecting green light and imparting the typical green color to plants; chlorophyll <u>a</u> is found in all autotrophic plants.
<i>Coliform Bacteria</i>	A group of bacteria predominately inhabiting the intestines of man and animals but also found in soil. Coliform bacteria are commonly used as indicators of the possible presence of pathogenic organisms.
<i>Colluvium</i>	Material transported to a site by gravity.
<i>Designated Beneficial Uses</i>	Any of the various uses of water, including, but not limited to domestic water supplies, industrial and agricultural water supplies, cold water biota, recreation, wildlife habitat and aesthetics. This is often shortened to either “designated uses” or “beneficial uses.”
<i>Dissolved Oxygen</i>	Oxygen that is dissolved in the water of a stream, lake, or reservoir. It is the oxygen used by aquatic organisms for respiration.
<i>Effluent</i>	Treated or untreated wastewater that flows out of a treatment plant, sewer or industrial outfall. Generally refers to wastes discharged into surface waters.
<i>Epilimnion</i>	The warm, top-water zone above the thermocline in a lake or reservoir.
<i>Eutrophic</i>	A body of water of high photosynthetic activity and low transparency, usually

Word	Definition
	rich in nutrients.
<i>Fauna</i>	The entire animal life of a given region, habitat or geological stratum.
<i>Fecal Streptococci</i>	A species of spherical bacteria including pathogenic strains found in the intestines of warm-blooded animals.
<i>Flora</i>	The plant life of a given region, habitat or geological stratum.
<i>Hydrology</i>	The science dealing with the properties, distribution and circulation of water.
<i>Hypolimnion</i>	The cold, bottom-water zone below the thermocline in a lake or reservoir.
<i>Igneous</i>	Rocks formed by solidification of molten magma.
<i>Influent</i>	A tributary stream to an industrial or wastewater treatment plant.
<i>Infusion</i>	The continuous slow introduction of one content into another.
<i>Intergravel D.O.</i>	Dissolved oxygen found in the substrate (usually gravel) of a stream, which is needed to support fish and macro invertebrates during early life stages.
<i>Limnology</i>	Scientific study of fresh water, especially the history, geology, biology, physics and chemistry of lakes and reservoirs.
<i>Load Allocation</i>	The portion of a receiving water's loading capacity that is allocated either to one of its existing or future nonpoint sources of pollution or to natural background sources.
<i>Loading Capacity</i>	The greatest amount of loading that a waterbody can receive without violating water quality standards.
<i>Mesotrophic</i>	A trophic region in which a lake or reservoir tends to be moderately productive, but nuisance algae blooms do not occur because the nutrient supply is limited.
<i>Nonpoint Source</i>	Discharges to waterbodies from diffuse sources as opposed to point sources which discharge from a single point.
<i>Noxious</i>	Physically or chemically harmful or destructive.
<i>Orthophosphate</i>	A form of soluble inorganic phosphorus that is directly utilizable biological processes including algal growth.
<i>Pelagic</i>	The open areas of lakes or reservoirs.
<i>Photic Zone</i>	The surface zone of the sea or a lake having sufficient light penetration for photosynthesis.
<i>Phytoplankton</i>	Microscopic algae and microbes that float freely in open water of lakes and oceans.
<i>Point Source Pollution</i>	The type of water quality degradation resulting from the discharges into receiving waters from sewers and other identifiable "points".
<i>Residuum</i>	The by-product of a geological process.
<i>Riparian</i>	Living or located on the banks of a natural watercourse.

Word	Definition
<i>Secchi Disc</i>	A black and white disc, 20 cm in diameter, used to measure the transparency of water. Used as an indicator of turbidity in a water body.
<i>Selective Withdrawal</i>	The ability to draft water from a reservoir from differing dam elevations.
<i>SNOTEL</i>	Snow survey telemetry which uses the principle of radio transmissions by meteor burst. Radio signals are aimed skyward where trails of meteorites reflect or re-radiate the signals back to earth.
<i>Stagnation</i>	The absence of mixing in a waterbody.
<i>Stratification</i>	Organization of a lake into horizontal layers due to differences in temperature.
<i>Thermocline</i>	A horizontal temperature discontinuity layer in a lake in which the temperature falls by at least 1°C per meter of depth.
<i>Total Maximum Daily Load (TMDL)</i>	A measurement establishing the total amount of pollutant(s) allowed in a water body while maintaining the water body at or above water-quality standards. In practice a TMDL is the sum of all the Load Allocations, Waste Load Allocations, and the Margin of Safety.
<i>Total Suspended Solids (TSS)</i>	The material retained on a 45-micron filter after filtration.
<i>Trophic State</i>	Level of growth or productivity of a lake as measured by phosphorus content, chlorophyll <i>a</i> concentrations, amount of aquatic vegetation, algal abundance and water clarity.
<i>Trophic State Index</i>	A system used by many states for classification of the degree of eutrophication exhibited by a lake or reservoir. The index combines measures of phosphorus, chlorophyll <i>a</i> levels and water clarity (transparency) to provide a frame of reference for comparing measurements over time.
<i>Turbidity</i>	A measure of the extent to which light passing through water is reduced to suspended materials.
<i>Waste Load Allocations</i>	The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution.
<i>Water Quality Modeling</i>	The input of variable sets of water quality data to predict the response of a lake or stream to different management or climatic variables.
<i>Watershed</i>	A region bounded peripherally by the surrounding topography that ultimately drains to a common lake or stream.

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7.1.2 Acronyms

Acronym	Description
303(d)	Comprehensive listing of water quality limited stream segments
AFO	Animal Feeding Operation
AWQMAP	Agricultural Water Quality Management Area Plan (Oregon DEQ terminology)
BAG	Basin Advisory Group (Idaho DEQ terminology)
BCC	Boise Cascade Corporation
BETTER	Box, Exchange, Transport, Temperature & Ecology of a Reservoir
BLM	US Bureau of Land Management
BNR	Biological Nutrient Removal or Biological Nutrient Reduction
BMP	Best Management Practice
BOR	US Bureau of Reclamation
BOD	Biochemical Oxygen Demand
BU	Beneficial Use
°C	Degrees Celsius
CES	Cooperative Extension System
CFR	Code of Federal Register
CFS	Cubic Feet per Second
CFU	Colony Forming Unit
COE	US Army Corps of Engineers
CRP	Conservation Reserve Program
CWA	Clean Water Act (Federal)
DBU	Designated Beneficial Use
DMA	Designated Management Agency
DO	Dissolved Oxygen
DOC	Dissolved Organic Carbon
DOP	Dissolved Ortho-phosphate
EPA	US Environmental Protection Agency
ESA	Endangered Species Act (Federal)
°F	Degrees Fahrenheit
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FLIR	Forward Looking Infrared Radiometry (a remote sensing technique for temperature)
FPA	Forest Protection Act
FWPCA	Federal Water Pollution Control Act
GIS	Geographical Information System
HCNRA	Hells Canyon National Recreation Area
HCC	Hells Canyon Complex
HUA	Hydrologic Unit Area
HUC	Hydrologic Unit Code
Hg	Mercury
IDA	Idaho Department of Agriculture
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Division of Environmental Quality
IDFG	Idaho Department of Fish & Game
IDHW	Idaho Depart of Health & Welfare
IDL	Idaho Department of Lands
IDWR	Idaho Department of Water Resources

Acronym	Description
IFPA	Idaho Forest Practices Act
IPCo	Idaho Power Company
ISCC	Idaho Soil Conservation Commission
ISDA	Idaho Department of Agriculture
Kg	Kilogram (one thousand grams)
L	Liter
LA	Load Allocation
LAC	Local Advisory Committee
LC	Loading Capacity
MAF	Million Acre-Feet
Mg	Milligram (one thousandth of a gram)
Mg/L	Milligrams per Liter
MOS	Margin of Safety
MSL	Mean Sea Level
MUSLE	Modified Unified Soil Loss Equation
MW	Megawatt
NEDC	
Ng	Nanogram (one billionth of a gram)
Ng/L	Nanograms per Liter
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRCS	National Resources Conservation Service
NTR	National Toxics Rule
NTU	Nephelometric Turbidity Units
NURP	National Urban Runoff Program
NWDA	
OAR	Oregon Administrative Rule
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODHW	Oregon Department of Health and Welfare
ODSL	Oregon Department of State Lands
ODH	Oregon Division of Health
OFPA	Oregon Forest Practices Act
ODWR	Oregon Department of Water Resources
OP	Ortho-phosphate
ORS	Oregon Revised Statutes
P	Phosphorus
PAG	Public Advisory Group
PAT	Public Advisory Team
PIR	Phosphorus Index Rating
PM&E	Protection, Mitigation and Enhancement
POC	Particulate Organic Carbon
PON	Particulate Organic Nitrogen
POP	Particulate Organic Phosphorus
QA/QC	Quality Assurance and Quality Control (for sampling and analysis of data)
RM	River Mile
RMO	Riparian Management Objectives
RHCA	Riparian Habitat Conservation Areas
RUSLE	Revised Universal Soil Loss Equation

Acronym	Description
SAWQP	State Agricultural Water Quality Program (Idaho program)
SBA	Sub-Basin Assessment
SR-HC	Snake River – Hells Canyon
SRP	Soluble Reactive Phosphorus
SRPA	Snake River Plain Aquifer
SSC	Suspended Sediment Concentration (also referred to as Total Suspended Sediment)
STORM	Storage, Treatment, Overflow & Runoff Model
SCD	Soil Conservation District
SWCD	Soil and Water Conservation District
SWMM	Stormwater Management Model
TAC	Technical Advisory Committee
TDG	Total Dissolved Gas
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
TSSed	Total Suspended Sediment
Ug	Microgram (one millionth of a gram)
Ug/L	Micrograms per liter
USBR	US Bureau of Reclamation
USDA	US Department of Agriculture
USEPA	US Environmental Protection Agency
USFS	US Forest Service
USFWS	US Fish & Wildlife Service
USGS	US Geological Survey
USLE	Universal Soil Loss Equation
UTM	Universal Transverse Mercator
WAG	Watershed Advisory Group (Idaho terminology)
WEQ	Wind Erosion Quotient
WHIP	Wildlife Habitat Incentives Program
WLA	Waste Load Allocation
WPCA	Water Pollution Control Act
WQI	Water Quality Index
WQLS	Water Quality Limited Segment
WQPA	Water Quality Program for Agriculture
WRP	Wetlands Reserve Program
WWTP	Wastewater Treatment Plant
WY	Water Year

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7.1.3 Other TMDLs in the General Area of the Snake River – Hells Canyon Reach

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Scheduling of TMDLs in the Snake River - Hells Canyon Drainage

Bolded entries are part of the Snake River - Hells Canyon TMDL

Location	Listed Pollutant (1998 303(d) list)	TMDL Due Date	State Responsible	HUC Number
Snake River				
Snake - American Falls to Milner (Lake Walcott TMDL)	DO, pest, sed	1999	Idaho	17040209
Snake - Milner to King Hill (Mid-Snake and Upper-Snake Rock TMDLs)	amm, bac, DO, nut, Qalt, sed, temp, therm	1997, 1999(?)	Idaho	17040212
Snake - King Hill to Hwy 51 CJ Strike Reservoir	sed nut, pest	2004 2004, 2000	Idaho Idaho	17050101 17050101, 17050102
CJ Strike Dam to Castle Creek	sed	2002	Idaho	17050103
Castle Creek to Swan Falls	sed	2002	Idaho	17050103
Swan Falls to Boise River Inflow* Snake River - Mainstem (RM 409 to 168)	bac, DO, nut, pH, Qalt, sed Hg, temp	2002 2007	Idaho Oregon	17050103* 17050115, 17050201, 17060101, 17050103**
Boise River to Weiser River Middle Snake - Payette (OR)	bac, nut, pH, sed Hg, temp	2001 2003	Idaho Oregon	17050115 17050115
Weiser River to Brownlee Dam Brownlee Reservoir	DO, nut, pH, sed Hg, temp	2001 2005	Idaho Oregon	17050201 17050201
Brownlee Dam to Oxbow Dam	nut, pest, sed	2001	Idaho	17050201
Oxbow Dam to above Salmon River	not listed	2001	Idaho	17060101
Lower Snake - Asotin**	Hg, temp	2005	Oregon	17060103**
* Mainstem Snake downstream from OR/ID border only ** Mainstem Snake downstream to OR/WA border only				
Owyhee River				
North Fork (TMDL completed)	temp	1999	Idaho	17050107
South Fork (TMDL completed)	temp	1999	Idaho	17050105

Location	Listed Pollutant (1998 303(d) list)	TMDL Due Date	State Responsible	HUC Number
Middle Fork (TMDL completed)	temp	1999	Idaho	17050107
Middle Fork	temp	2006	Oregon	17050107
Lower	bac, chl a, DDT, Diel, DO, Hg, temp	2006	Oregon	17050110
Mainstem tribs	bac, sed, Qalt, temp	2001	Idaho	17050104
Tribes	temp	1999	Idaho	17050107
Tribes	temp, Hg	2006	Oregon	17050107, 17050110
Boise River	sed	2000	Idaho	17050111
North Fork	sed	2000	Idaho	17050113
South Fork	bac, nut, Qalt, sed, temp	1998*	Idaho	17050114
Lower* (Lucky Peak to Snake River)	DO, nut, OG, sed, unk	2001, 2006	Idaho	17050113, 17050114
(TMDL completed)				
Tribes				
* Nutrient TMDL pending SR-HC TMDL allocations				
Malheur River	bac, Qalt, temp	2003	Oregon	17050116
Upper	bac, chl a, DDT, Diel	2003	Oregon	17050117
Lower				
Tribes	bac, chl a, temp	2003	Oregon	17050116, 17050117
Payette River	DO, nut, pH	1998, 2003	Idaho	17050123
North Fork	temp	2003	Idaho	17050123, 17050122
Middle Fork	nut, OG, sed	1999	Idaho	17050122
Black Canyon Reservoir	bac, nut, temp	1999	Idaho	17050122
Black Canyon Dam to Snake				
(TMDL completed)				
Tribes	Halt, nut, Qalt, sed, temp	2003	Idaho	17050122, 17050123
Weiser River	bac, DO, nut, sed, temp	2003	Idaho	17050124
Tribes	bac, nut, Qalt, sed, temp	2003, 2006	Idaho	17050124

Location	Listed Pollutant (1998 303(d) list)	TMDL Due Date	State Responsible	HUC Number
Burnt River and Tribs	chl a, Halt, Qalt, sed, temp	2005	Oregon	17050202
Powder River and Tribs	bac, DO, Qalt, sed, temp	2005	Oregon	17050203
Pine Creek	temp	2005	Oregon	17060101
Imnaha River	temp	2001	Oregon	17060102
Tribes	Halt, temp	2001	Oregon	17060102
Salmon River North Fork South Fork Lower	sed, temp, unk sed sed	2000, 2001 2000 2004	Idaho Idaho Idaho	17060201, 17060203 17060208 17060209
Mainstem tribes Tribes	Qalt, sed, temp bac, DO, Halt, mtu, nut, pH, Qalt, sed, temp, unk	2005 2000, 2001, 2004, 2005, 2006	Idaho Idaho	17060205, 17060206 17060201, 17060202, 17060203, 17060204, 17060205, 17060207, 17060208, 17060209, 17060210
Dennett Creek Warm Springs Creek Hog Creek Scott Creek Divide Creek Wolf Creek Getta Creek	Qalt, sed, temp nut, sed nut, sed nut, sed sed sed sed	2001 2001 2001 2001 2005 2005 2005	Idaho Idaho Idaho Idaho Idaho Idaho Idaho	17050201 17050201 17050201 17050201 17060101 17060101 17060101

algae = nuisance algae growth
amm = ammonia (NH₃)
bac = bacteria or pathogens
chl a = chlorophyll a
DDT = pesticide listing for the presence of DDT and associated metabolites (DDD, DDE)
Diel = pesticide listing for the presence of the insecticide Dieldrin
DO = low dissolved oxygen
Halt = habitat alteration
Hg = metals listing for the presence of mercury
mtu = metals listing for the presence of unidentified (unknown) metals
nut = listing for excessive nutrients
pH = pH outside of the identified range (6.5 to 9.5 in Idaho waters, 7.0 to 9.0 in Oregon waters)
pest = listed for the presence of pesticides
Qalt = flow alteration
sed = presence of excessive sediment
temp = temperature exceedences
therm = thermal alteration
unk = listed because of non-support of designated beneficial uses due to unknown pollutants/pollution